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EXAMINER

LI, ZHUO H

ART UNIT	PAPER NUMBER
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2189

DATE MAILED: 05/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/892,816

Applicant(s)

MCGREW ET AL.

Examiner

Zhuo H. Li

Art Unit

2189

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

4

DETAILED ACTION

Response to Amendment

1. This Office action is in response to the amendment filed 2/10/2005.

Claim Rejections - 35 USC § 112

2. Claims 5-9 and 14-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 5, the step of “storing pointers, in a separate memory, to a number of different locations within the flash memory where the free space is located” is confused because it is unclear whether to store pointers in a separate memory or to a number of different locations within the flash memory where the free space is located. The limitations should be rewritten as -- storing pointers, in a separate memory, to indicate a number of different locations within the flash memory where the free space is located-- in accordance with the specification.

Claims 6-9 are also rejected because of depending on claim 5 containing the same deficiency.

Regarding claim 14, it is unclear whether the second memory recited in line 17 referring to a random access memory or not.

Claims 15-17 are also rejected because of depending on claim 5 containing the same deficiency.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-2, 4-5, 10-12, 14-15, 17-19 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Parker (US PAT. 6,535,949).

Regarding claim 1, Parker disclose a method comprising receiving a request to download data into a flash memory (24, figure 1), halting the downloading of the data into the flash memory until the flash memory is initialized, wherein the initialization includes storing pointers in a second memory (22, figure 1) to indicating different locations within the flash memory where the data is to be stored within the flash memory and storing the data into the flash memory based on the pointer stored in the second memory (figure 7, col. 5 line 36 through col. 6 line 57 and col. 11 line 44 through col. 12 line 60).

Regarding claim 2, Parker discloses the initialization of the flash memory including the steps of generating headers for the different locations within the flash memory where the data is to be stored and storing the headers at the different locations within the flash memory (col. 10 line 25 through col. 11 line 6).

Art Unit: 2189

Regarding claim 4, Parker teaches the initialization of the flash memory comprising reclaiming space within the flash memory that is reclaimable for storage of data into the flash memory (col. 11 line 56 through col. 12 line 50).

Regarding claim 5, Parker discloses a method comprising the steps of receiving a request to store data into a flash memory (24, figure 1) of a device (10, figure 1), wherein the request including size of the data, initializing the flash memory of the device prior to receiving the data in response to receiving the request, wherein the initialization comprises storing pointers in a separate memory (22, figure 1), to indicate a number of different locations within the flash memory where the free space is located, determining whether the size of free space within the flash memory is greater than the size of the data and reclaiming space within the flash memory upon determining that the size of the free space within the flash memory is not greater than the size of the data (figure 7, col. 5 line 36 through col. 6 line 57 and col. 11 line 44 through col. 12 line 60). Note Parker also teaches the device capable of receiving data via a RF transceiver (col. 5 lines 49-53 and col. 6 lines 46-57) so that the device is inherently capable of receiving a request from an external device to store data into the flash memory via the RF transceiver. Thus, Parker teaches the claimed limitations.

Regarding claim 10, Parker teaches an apparatus (10, figure 1) comprising a flash memory (24, figure 1) partitioned into blocks (51A-51N, figure 3), a random access memory (22, figure 1) coupled to the flash memory, a write unit (12, figure 1) coupled to the flash memory and the random access memory, wherein the write unit is to receive a request to download data into the flash memory and wherein the write unit is to download the data into the flash memory and a plurality of applications stored in a non-volatile storage medium of the apparatus, i.e., an

Art Unit: 2189

initialize unit, coupled to the flash memory, the random access memory and the write unit to initialize the flash memory in response to receive the request download data by storing pointers in the random access memory to indicate the number of the blocks within the flash memory that are free to store data prior to download data into the flash memory (col. 5 line 36 through col. 10 line 5 and col. 11 line 44 through col. 12 line 60).

Regarding claim 11, Parker teaches to store headers at the number of different blocks within the flash memory prior to download the data into the flash memory (col. 10 lines 50-58).

Regarding claim 12, Parker teaches to reclaim space within the flash memory prior to download the data into the flash memory, that is reclaimable for storage of the data into the flash memory upon determining that the size of free space within the flash memory is less than the size of the data to be downloaded into the flash memory (figure 7 and col. 11 line 50 through col. 12 line 6).

Regarding claim 14, Parker discloses a system comprising a cellular telephone (10, figure 1) wirelessly coupled to a network, wherein the cellular telephone comprising a flash memory (24, figure 1) partitioned into blocks (51A-51N, figure 3), a random access memory (22, figure 1) coupled to the flash memory, a processor (12, figure 1) coupled to the flash memory and the random access memory, the processor to execute a number of instructions, which when executed by the processor causes the processor to receive a request to download data into the flash memory, halt the downloading of the data into the flash memory until the flash memory is initialized, wherein the initialization includes storing pointers in the random access memory to indicate the number of the blocks within the flash memory where the data is to be stored and store the data into the flash memory based on the pointers stored in the random access memory

Art Unit: 2189

(col. 5 line 36 through col. 10 line 5 and col. 11 line 44 through col. 12 line 60). Note while Parker teaches the cellular telephone capable of receiving data via a RF transceiver over the network (col. 5 lines 49-53 and col. 6 lines 46-57) so that the cellular telephone is inherently capable of receiving a request from a server coupled to the network to store data into the flash memory. Thus, Parker teaches the claimed limitations.

Regarding claim 15, the limitations of the claim are rejected as the same reasons set forth in claim 2.

Regarding claim 17, the limitations of the claim are rejected as the same reasons set forth in claim 4.

Regarding claim 18, the limitations of the claim are rejected as the same reasons set forth in claim 1.

Regarding claim 19, the limitations of the claim are rejected as the same reasons set forth in claim 2.

Regarding claim 21, the limitations of the claim are rejected as the same reasons set forth in claim 4.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 3, 6-8, 13, 16, 20 and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parker (US PAT. 6,535,949) in view of Lloyd-Jones (EP 0489204).

Regarding claim 3, Parker differs from the claimed invention in not specifically teaching the step of storing the data received from the download into a number of buffers prior to storing the data into the flash memory. However, it is old and notoriously well known in the art of a data storage device to store received data into buffers prior to store the data into a flash memory in order to reduce the data storage device vulnerability during performing storing operation, for example see Lloyd-Jones (abstract). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Parker in having the step of storing the data received from the download into a number of buffers prior to storing the data into the flash memory, as per teaching of Lloyd-Jones, in order to reduce the data storage device vulnerability during performing storing operation.

Regarding claim 6, Parker discloses the initialization of the flash memory including the steps of generating headers for the different locations within the flash memory where the data is

Art Unit: 2189

to be stored and storing the headers at the different locations within the flash memory (col. 10 line 25 through col. 11 line 6). Parker differs from the claimed invention in not specifically teaching the steps of transmitting a signal to the external device to transmit the data after initialization of the flash memory is complete, receiving the data into a number of buffers within the device and storing the data within the number of the buffers into the number of different locations within the flash memory where the free space is located. However, Lloyd-Jones teaches a data storage device capable of transmitting a signal to an external device, i.e., a host, after the initialization of a first memory is completed (col. 11 lines 16-25), receiving the data into a number of buffers (15, figure 1) within the device and storing the data within the number of buffers into the number of different locations within a flash memory (18, figure 1) where the free space is located (abstract and col. 11 line 26 through col. 12 line 6). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Parker in having the steps of transmitting a signal to the external device to transmit the data after initialization of the flash memory is complete, receiving the data into a number of buffers within the device and storing the data within the number of the buffers into the number of different locations within the flash memory where the free space is located, as per teaching of Lloyd-Jones, in order to reduce the data storage device vulnerability during performing storing operation.

Regarding claim 7, Parker teaches the device being a cellular telephone and the data being transmitted to the cellular telephone through a wireless transmission link (col. 5 lines 54-63). Note Parker also teaches the device capable of receiving data via a RF transceiver (col. 5

Art Unit: 2189

lines 49-53 and col. 6 lines 46-57) so that one skilled in the art would recognize the external device being a server coupled to a wireless network in communicate with the device.

Regarding claim 8, Lloyd-Jones teaches to disable interrupts within the device when portions of the data are being written into the number of different location in the flash memory (figure 2B and col. 11 lines 22-25).

Regarding claim 13, the limitations of the claim are rejected as the same reasons set forth in claim 3.

Regarding claim 16, the limitations of the claim are rejected as the same reasons set forth in claim 3.

Regarding claim 20, the limitations of the claim are rejected as the same reasons set forth in claim 3.

Regarding claim 22, Parker discloses a machine readable medium that provides instruction, which when executed by a machine, cause the machine to perform operation comprising the steps of receiving a request to store data into a flash memory (24, figure 1) of a device (10, figure 1), wherein the request including size of the data, initializing the flash memory of the device prior to receiving the data in response to receiving the request, wherein the initialization comprises determining whether the size of free space within the flash memory is greater than the size of the data, reclaiming space within the flash memory upon determining that the size of the free space within the flash memory is not greater than the size of the data, generating headers for the different locations within the flash memory where the data is to be stored, storing the headers at the different locations within the flash memory, storing pointers in a separate memory (22, figure 1), to indicate a number of different locations within the flash

Art Unit: 2189

memory where the free space is located (figure 7, col. 5 line 36 through col. 6 line 57, col. 10 line 25 through col. 11 line 6 and col. 11 line 44 through col. 12 line 60). Note Parker also teaches the device capable of receiving data via a RF transceiver (col. 5 lines 49-53 and col. 6 lines 46-57) so that the device is inherently capable of receiving a request from an external device to store data into the flash memory via the RF transceiver. Thus, Parker teaches the claimed limitations. Parker differs from the claimed invention in not specifically teaching the steps of transmitting a signal to the external device to transmit the data after initialization of the flash memory is complete, receiving the data into a number of buffers within the device and storing the data within the number of the buffers into the number of different locations within the flash memory where the free space is located. However, Lloyd-Jones teaches a data storage device capable of transmitting a signal to an external device, i.e., a host, after the initialization of a first memory is completed (col. 11 lines 16-25), receiving the data into a number of buffers (15, figure 1) within the device and storing the data within the number of buffers into the number of different locations within a flash memory (18, figure 1) where the free space is located (abstract and col. 11 line 26 through col. 12 line 6). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Parker in having the steps of transmitting a signal to the external device to transmit the data after initialization of the flash memory is complete, receiving the data into a number of buffers within the device and storing the data within the number of the buffers into the number of different locations within the flash memory where the free space is located, as per teaching of Lloyd-Jones, in order to reduce the data storage device vulnerability during performing storing operation.

Art Unit: 2189

Regarding claim 23, Parker teaches the second memory being a random access memory (22, figure 1).

Regarding claim 24, the limitations of the claim are rejected as the same reasons set forth in claim 7.

Regarding claim 25, the limitations of the claim are rejected as the same reasons set forth in claim 8.

7. Claims 9 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parker (US PAT. 6,535,949) in view of Lloyd-Jones (EP 0489204) as applied in claims above, and further in view of Watanabe et al. (US PAT. 5,590,306 hereinafter Watanabe).

Regarding claim 9, the combination of Parker and Lloyd-Jones differs from the claimed invention in not specifically teaching to determine whether interrupts are pending in the device periodically during the time the data is being written into the number of different locations in the flash memory and periodically halting the writing of the data into the number of different locations in the flash memory and servicing the interrupts that are pending in the device upon determining that interrupts are pending. However, Watanabe teaches a memory management system comprising a main control for determining whether interrupts, i.e., busy signals, are pending periodically during the time the data is being written into the number of different locations of in the flash memory and periodically halting the writing of the data into the number of different locations in the flash memory and servicing the interrupts that are pending in the device upon determining that interrupts are pending in order to enhance the operation (col. 14 lines 11-32). Therefore, it would have been obvious to a person of ordinary skill in the art at the

Art Unit: 2189

time the invention was made to modify the combination of Parker and Lloyd-Jones in having the steps to determine whether interrupts are pending in the device periodically during the time the data is being written into the number of different locations in the flash memory and periodically halting the writing of the data into the number of different locations in the flash memory and servicing the interrupts that are pending in the device upon determining that interrupts are pending, as per teaching of Watanabe, in order to enhance the operation.

Regarding claim 26, the limitations of the claim are rejected as the same reasons set forth in claim 9.

Response to Arguments

8. Applicant's arguments with respect to claims 1-26 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion


9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See et al. (US PAT. 5,987,478) discloses a virtual small block file manager for flash memory device (abstract). DeMarco et al. (US PAT. 5,566,314) discloses a method for utilizing flash memory device to update files (col. 1 lines 35-55 and col. 2 line 7 through col. 4 line 37). Takahashi (JP 2000305839A) discloses a storage device to reduce frequency in generating address conversion tables when accessing data (abstract).

Art Unit: 2189

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zhuo H. Li whose telephone number is (571) 272-4183. The examiner can normally be reached on Tue-Fri 8:30 AM-6:00 PM, and alternate Monday 8:30 AM-6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim can be reached on (571) 272-4182. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Zhuo H. Li 
Patent Examiner
Art Unit 2189



MATTHEW D. ANDERSON
PRIMARY EXAMINER